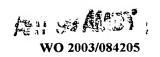## AMENDED CLAIMS
[(received by the International Bureau on 24 March 2004 (24.03.04);
original claims 1-15 replaced by new claims 1-21 (3 pages)]

1. A method of compression of image data of an image wherein each element is
    compared with a previous element and:

    (a)   if they are both equal, a first value is recorded; and

    (b)   if they are not both equal, a second value is recorded.

2. A method as claimed in claim 1, wherein each element is a pixel.

3. A method as claimed in claim 1 or claim 2, wherein the first value is a 1, and
    the second value is a 0.

4. A method as claimed in any one of claims 1 to 3, wherein the first and second
    values are stored in a bit plane.

5. A method as claimed in claim 4, wherein for a one-dimensional compression,
    a single bit plane is used to store the values.

6. A method as claimed in claim 4, wherein for a two-dimensional compression,
    comparison is in both horizontal and vertical directions, a separate bit plane
    being used for each direction.

7. A method as claimed in claim 6, wherein the bit-planes for the horizontal and
    vertical directions are combined by binary addition to form a repetition coded
    compression bit-plane.

8. A method as claimed in claim 7, wherein the combining is by binary addition,
    only the second values being stored for lossless reconstruction of the image.

9. A method as claimed in claim 8, wherein the result of the combining is
    repetition coded compression data values, all other image data values being
    able to be reconstructed using the repetition coded compression data values,
    and the bit planes for the horizontal and vertical directions.

10. A method as claimed in any one of claims 1 to 9, wherein storage in bit planes
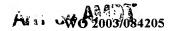   is in a matrix.

AMENDED SHEET (ARTICLE 19)

11. A method as claimed in any one of claims 1 to 10, wherein a single mathematical operation is performed for each element.

12. A system for repetition coded compression comprising:

(a) a camera for capturing at least one image and for supplying digital data;

(b) a reshaping block for rearranging the digital data into a matrix of image data values;

(c) a processor for receiving the matrix of image data values and compressing the image data values to form compressed data; and

(d) a memory for storage of the compressed data.

13. A system as claimed in claim 12, wherein the camera is analog, an analog-to-digital converter being used to convert the analog image to provide the digital data.

14. A method for compression of an image comprising:

(a) capturing the image;

(b) converting the image into digital form to provide digital data;

(c) reshaping the digital data into a digital data matrix;

(d) encoding repetitions in the digital data matrix into a bit-plane index, and stored data values; and

(e) storing the compressed data in a storage memory.

15. A method as claimed in claim 15, wherein there the bit-planes containing information regarding the repetitions along horizontal and vertical directions.

16. A method as claimed in claim 15, wherein there is further included combining the horizontal and vertical bit-planes by a binary addition operation to give a repetition coded compression bit-plane.

17. A method as claimed in claim 16, further including comparing the repetition coded compression bit-plane with the digital data matrix to obtain final repetition coded compression data values.

AMENDED SHEET (ARTICLE 19)

18.   A method as claimed in claim 17, further including storing and archiving the repetition coded compression data values along with the horizontal and vertical bit-planes.

5   19.   A method as claimed in any one of claims 14 to 18, wherein the compression is lossless.

20.   A method as claimed in any one of claims 14 to 18, further including compression by comparison with a threshold value to achieve lossy

10   compression and a significantly higher compression ratio.

21.   A method as claimed in any one of claims 14 to 20, wherein the method is used for an application selected from the group consisting of: medical image archiving, medical image transmission, database system, information

15   technology, entertainment, communications applications, and wireless application, satellite imaging, remote sensing, and military applications.